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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* BRIAN P. LAMOTHE, DAVID S. WILLETT,  
IRVIN J. SCHWARTZENBURG, and JESSE R. FREDERICK

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Appeal 2008-2153  
Application 10/085,298  
Technology Center 2400

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Decided: December 12, 2008

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Before JOSEPH L. DIXON, JAY P. LUCAS, and  
ST. JOHN COURTENAY III, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 8-15 and 62. Claims 1-7 and 16-61 have been cancelled (App. Br. 5). We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

A. INVENTION

The invention at issue on appeal is generally directed to limiting unauthorized use of software in embedded computing systems. More particularly, the preferred embodiments of Appellants' invention are directed to the use of a license key coupled to the embedded system which serves to authorize use of software within the embedded system (Spec. 1).

B. ILLUSTRATIVE CLAIM

Claim 8, which further illustrates the invention, follows.

8. A system for selectively allowing use of embedded software comprising:

a microcontroller;

a first non-volatile storage device coupled to the microcontroller, the first non-volatile storage device storing a plurality of programs executable by the microcontroller, the plurality of programs comprising at least a program to perform flow calculations, a program to perform PLC functions, and a program to perform RTU functions;

a second non-volatile storage device coupled to the microcontroller, the second non-volatile storage device storing software license information; and

wherein the microcontroller refrains from executing at least one of the plurality of programs on the first non-volatile storage device if the software license information on the second non-volatile storage device does not contain an entry allowing use.

### C. PRIOR ART

The Examiner relies upon the following references as evidence in support of the rejections:

Mustafa	US 2003/0028786 A1	Feb. 6, 2003
Allen	US 2001/0034567 A1	Oct. 25, 2001
Hsu	US 5,812,662	Sep. 22, 1998

Microchip Technology, Microchip 25AA040/25LC040/25C040, 1997, pages 1-20.

Freescall Semiconductor, Inc. MPC862SR1 2003, pages 1-6

### D. REJECTIONS

Claims 8, 10, 14 and 62 stand rejected under 35 U.S.C. § 103(a) as being obvious over Mustafa in view of Allen.

Claims 9, 11, 12, and 15 stand rejected under 35 U.S.C. § 103(a) as being obvious over Mustafa in view of Allen and Hsu.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as being obvious over Mustafa in view of Allen, Hsu, and Microchip.

## II. CLAIM GROUPING

When the patentability of dependent claims is not argued separately, the claims stand or fall with the claims from which they depend. *In re King*, 801 F.2d 1324, 1325 (Fed. Cir. 1986); *In re Sernaker*, 702 F.2d 989, 991 (Fed. Cir. 1983).

Here, Appellants select claim 8 as representative of the group consisting of claims 8, 10, and 62 (Br. 9). Appellants then argue on page 12 of the Brief that the rejections for the remaining claims should be reversed for the same reasons previously discussed regarding independent claim 8 (*see* Br. 9, Section VII(A)(1)). Because Appellants do not separately argue the patentability of claims 9-15 and 62, Appellants have waived any arguments directed to the separate patentability of these claims. *See In re Young*, 927 F.2d 588, 590 (Fed. Cir. 1991). *See also* 37 C.F.R. § 41.37(c)(1)(vii). (“Notwithstanding any other provision of this paragraph, the failure of appellant to separately argue claims *which appellant has grouped together* shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately.”)

### III. APPELLANTS’ CONTENTIONS

Regarding the rejection of representative claim 8, Appellants contend that “Mustafa appears to be silent as to the type of programs to which the Mustafa system may apply.” (Br. 10, last paragraph). Appellants note that “Allen is specifically directed to retail fuel dispensing” and the Examiner relies on Allen for teaching fuel calculations (*id.*). Appellants thus contend that “Mustafa and Allen fail to teach or fairly suggest ‘a first non-volatile storage device ... a program to perform flow calculations, a program to perform PLC functions, **and** a program to perform RTU functions.’” (*Id.*)

Appellants also contend that “Mustafa and Allen fail to teach ‘a first non-volatile storage device coupled to the microcontroller [having the three distinct programs and] a second non-volatile storage device coupled to the

microcontroller, the second non-volatile storage device storing software license information' because the three distinct programs reside and execute at the end-user devices of Allen, not the network management system where the dongle connects in this [first] hypothetical [combination]." (Br. 11, ¶ 2).

Lastly, Appellants contend that Mustafa and Allen are not combinable because "[i]f, on the other hand, Mustafa's dongle couples to Allen's end-user devices and the end-user devices are operated under the Mustafa system, such a system changes the principle of operation of Allen and renders Allen unsatisfactory for its intended purpose of having the network management system 402 control "(ii) downloading software updates, (iii) reconfiguring the fuel equipment modules . . . (vi) maintaining and otherwise controlling any suitable aspects of the refueling station operations." (Br. 11, ¶3).

#### IV. EXAMINER'S RESPONSE

The Examiner responds to Appellants' contentions as follows:

Allen is relied on for the teaching of the plurality of executable programs stored in the first non-volatile storage device (i.e. updated versions of software applications installed on site management module, see Allen, Fig. 9, element 904, the site management module is the implementation of the computing machine (Fig. 3, element 510) and corresponds functionally to the site management module (Fig. 5, element 76) as disclosed in paragraphs 0106, 0111) comprising at least a program to perform flow calculations (see Allen, paragraph 0072), a program to perform PLC functions (PLC functions, as best understood, are monitored and control functions, see Allen, paragraph 0072), and a program to perform RTU functions (see Allen, paragraphs 0063, 0071, the computing device (Fig. 4, element 16) corresponds functionally to site management

module (Fig. 5, element 76), RTU functions, as best understood, [as a] remote terminal unit (see specification of instant application, [], paragraph 0022).  
(Ans. 8-9).

In paragraph 0111, Allen discloses the updated versions of software applications installed on site management module (i.e. SMM, Fig. 9, element 904), those software applications are needed to enhance the functionality of SMM with newly added application programs (see Allen, paragraph 0114). The Allen reference therefore discloses the application programs (i.e. three distinct programs are downloaded, installed and executed in the SMM unit) to meet the limitation of flow, PLL and RTU programs on a storage device coupled to microcontroller.  
(Ans. 9).

## A. ISSUES

### ISSUE 1

Have Appellants shown error in the Examiner's finding that Mustafa and Allen teach and/or suggest a first non-volatile storage device that stores a program to perform flow calculations, a program to perform PLC functions, and a program to perform RTU functions? (Claim 8).

### ISSUE 2

Have Appellants shown error in the Examiner's finding that the Mustafa and Allen references would have been combinable by a person of ordinary skill in the art?

## B. PRINCIPLES OF LAW

“What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103.” *KSR Int'l Co. v.*

*Teleflex, Inc.*, 127 S. Ct. 1727, 1742 (2007). To be nonobvious, an improvement must be “more than the predictable use of prior art elements according to their established functions.” *Id.* at 1740.

### C. FINDINGS OF FACT

1. Allen discloses at paragraph [0044] that “refueling station 504 is equipped with a software agent facility 514 that is preferably integrated with computing machine 510 in the form of reprogrammable software or embedded code.” (*See also* Allen, Fig. 4).
2. Allen discloses at paragraph [0063] a fuel dispensing network where “[c]omputing device 16 is further configured with an internet connection 28 and a modem/phone connection 30 to enable communications with remote networks and sites, namely the network management system of the present invention.” (*See also* Allen, Fig. 4).
3. Allen discloses at paragraph [0071] that “[o]perational control of dispenser configuration 40 is provided by a site management module 76 provided in the form of a computing device, microprocessor, or network machine (e.g., server).” (*See also* Allen, Fig. 5).
4. Allen discloses at paragraph [0071] that “[s]ite management module 76 corresponds functionally to computing device 16 in FIG. 4 and is linked to dispenser controllers 42 and 44 over a communications link 78 (which corresponds to link 24 in FIG. 4), preferably employing the TCP/IP communications protocol.” (*See also* Allen, Fig. 5).



5. Allen discloses at paragraph [0072] that “[s]ite management module (SMM) 76 provides operating commands to fuel control modules 70, 72, and 74 to regulate control of the fuel pump motors.” (*See also* Allen, Fig. 5).
6. Allen discloses at paragraph [0072] that “SMM 76 also supplies the command information needed to manage and otherwise direct the operations of the various other peripheral devices of dispenser configuration 40. This command information is generated (at least in part) in response to instructions provided by POS 80 in the form of an application-level command set, for example.” (*See also* Allen, Fig. 5).
7. Allen discloses at paragraph [0111] that “[c]ommunications server 910 is capable of downloading (via ISP 906 or modem assembly 908) updated versions of software applications installed on SMM 904. For this purpose, it is preferable that the applications running on SMM 904 be reprogrammable.” (*See also* Allen, Fig. 9).
8. Allen discloses at paragraph [0114] that “[s]oftware updates would be needed, for example, to modify or update the operating system installed on SMM 904, enhance the functionality of SMM 904 with newly added applications programs, supply the appropriate device driver routines when new peripheral devices are attached to USB system 608, and modify (i.e., reprogram) the control function of controller 606.” (*See also* Allen, Fig. 9).

#### D. ANALYSIS

##### ISSUE 1

Regarding the Examiner's finding that the combination of Mustafa and Allen teaches and/or suggests a first non-volatile storage device, a program to perform flow calculations, a program to perform PLC functions, and a program to perform RTU functions, we note that Appellants had the opportunity to address the Examiner's response in a Reply Brief, but chose not to do so. While Appellants contend that "Mustafa appears to be silent as to the type of programs to which the Mustafa system may apply." (Br. 10, last paragraph), our review of Appellants' Brief and Specification reveals little explanation regarding specific details of the claimed "plurality of programs comprising at least a program to perform flow calculations, a program to perform PLC functions, and a program to perform RTU functions (claim 8).

##### Claim Construction

During prosecution, "the PTO gives claims their 'broadest reasonable interpretation.'" *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)).

Here, when we refer to Appellants' disclosure for *context*, we note that the claimed "program to perform flow calculations" (claim 8), is described in Appellants' Specification at paragraph [0025] as a "flow computer (software components 38 and 40)." Software component 38 is shown as "Meter 38" and software component 40 is shown as "Historical

40” in Appellants’ Figure 2. Thus, consistent with Appellants’ Specification, we broadly but reasonably construe the claimed program to perform flow calculations as any program that performs any type of flow calculation.

We note that the claimed “program to perform PLC functions” (claim 8) is broadly described in Appellants’ Specification as a “programmable logic controller (PLC) to perform operations on discrete inputs and outputs.” (Spec. [0020]). We further note that Appellants’ Specification at paragraph [0025] describes the claimed PLC as corresponding to software component 42, as illustrated in block form as “Sequence 42” in Appellants’ Figure 2. Thus, consistent with Appellants’ Specification, we construe the claimed “program to perform PLC functions” as broadly but reasonably encompassing any software program or software component that performs any type of input and output.

Regarding the claimed “program to perform RTU functions,” we note that Appellants’ Specification at paragraph [0020] supports the claimed “RTU functions” with the disclosure of a Remote Terminal Unit. Appellants’ Specification at paragraph [0025] further describes an RTU as corresponding to software component 44, as illustrated in block form as “Communications 44” in Appellants’ Figure 2. Thus, consistent with Appellants’ Specification, we construe the claimed “program to perform RTU functions” as broadly but reasonably encompassing any software program or software component that performs remote terminal unit (RTU) functions (*see also* Spec. [0020]).

Given the aforementioned claim construction, we find Appellants have not shown error in the Examiner's determination that Mustafa, as modified by Allen, at least suggests the above three types of programs stored on a non-volatile storage device as claimed (*see* representative claim 8). Because Allen is directed to the remote management of retail petroleum equipment (i.e., fuel dispensers), we agree with the Examiner that the claimed "program to perform flow calculations" is taught and/or suggested by Allen (*see e.g.*, FF 5-6). Given the remote management aspect of Allen, we also find Appellants have not shown error in the Examiner's determination that Allen also teaches and/or suggests the claimed "program to perform RTU functions" (*see e.g.*, FF 2-4, regarding communications). Likewise, we find Appellants have not shown error in the Examiner's determination that the monitor and control aspects of Allen teach and/or suggest the claimed program to perform PLC (i.e., input/output) functions (*see e.g.*, FF 5-6). We also note that Allen discloses at paragraph [0111] that communications server 910 is capable of downloading updated versions of the software applications installed on SMM 904 and also that it is preferable that the applications running on SMM 904 be reprogrammable. (FF 7).

Regarding the claimed first non-volatile storage device, we note that the Examiner relies on Mustafa's CD ROM 327 as providing this teaching (as shown in Mustafa's Figure 19). Appellants have ignored this finding by the Examiner in the Brief on appeal (*see* Ans. 5, l. 1) and have mischaracterized the Examiner's rejection in proposing that Mustafa's dongle (that stores software license terms) corresponds to the first non-

volatile storage device. We note that the Examiner relies on Mustafa's dongle 10 (Figure 1A) as teaching the claimed second non-volatile storage device (*see* Ans. 5, l. 2-3). Therefore, we find Appellants have not shown error in the Examiner's finding that the combination of Mustafa and Allen teaches and/or suggests a first non-volatile storage device that stores a program to perform flow calculations, a program to perform PLC functions, and a program to perform RTU functions (claim 8).

## ISSUE 2

Regarding *Issue 2*, we also find no error with the Examiner's reasoning that combining Mustafa's CD ROM non-volatile storage with Allen's aforementioned programs would have protected the programs (*see* Ans. 6, ¶ 1). The Examiner's reasoning appears to simply state the advantages of non-volatile storage over volatile storage where data is lost if the power is turned off.

We note that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of a primary reference. It is also not that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 414, 425 (CCPA 1981); *In re Young*, 927 F.2d 588, 591 (Fed. Cir. 1991).

Here, we find Appellants' analysis mischaracterizes the Examiner's rejection (regarding Mustafa's CD ROM 327 which the Examiner finds teaches the claimed first non-volatile storage device), and also relies on

bodily incorporating Allen into the structure of the primary Mustafa reference. We agree with the Examiner that the combined teachings of the references would have at least suggested Appellants' argued claim 8 to those of ordinary skill in the art. Moreover, given that the Examiner is not relying on the bodily incorporation of Allen's entire system into the structure of the Mustafa reference, we find unavailing Appellants' contention that combining Mustafa's system with Allen's system changes the principle of operation of Allen and renders Allen unsatisfactory for its intended purpose (*see* Br. 11-12).

Lastly, we find the Examiner's proffered combination of Mustafa and Allen merely combines familiar elements (non volatile storage elements and associated software programs stored thereon) to yield predictable results.

"The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results."

*Leapfrog Enter., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (quoting *KSR*, 127 S. Ct. at 1739).

Accordingly, we find Appellants have not shown error in the Examiner's determination that the Mustafa and Allen references would have been combinable by a person of ordinary skill in the art to reach Appellants' claimed invention.

#### CONCLUSION OF LAW

Appellants have not established that the Examiner erred in rejecting claims 8, 10, 14, and 62 under 35 U.S.C. § 103(a) as being obvious over Mustafa in view of Allen.

Appellants have not established that the Examiner erred in rejecting claims 9, 11, 12, and 15 under 35 U.S.C. § 103(a) as being obvious over Mustafa in view of Allen and Hsu.

Appellants have not established that the Examiner erred in rejecting claim 13 under 35 U.S.C. § 103(a) as being obvious over Mustafa in view of Allen, Hsu, and Microchip.

Therefore, claims 8-15 and 62 are not patentable.

#### DECISION

We affirm the Examiner's decision rejecting claims 8-15 and 62.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

#### AFFIRMED

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